

Application No. 10/634,152

Atty Docket No. MLSE 1034-1

In the Claims:

The following is a list of claims pending in this application and their current status. This listing supersedes and replaces all prior versions and listings.

1. (Original) A method of lithography for enhancing uniformity of critical dimensions of features patterned onto a workpiece using a multipass writing strategy, the method comprising the actions of:

- coating said workpiece with a coating sensitive to an energy beam,
- providing an energy beam source,
- determining an individual dose for each pass so that each pass will affect said coating essentially equal, thereby enhancing said uniformity of critical dimension,
- exposing said coating in said multipass writing strategy by using said individual dose for each pass,
- developing said coating.

2. (Original) The method according to claim 1 further comprising the action of:

- creating said features by a spatial light modulator.

3. (Original) The method according to claim 1, wherein said energy beam source is a electromagnetic radiation source emitting pulsed radiation in the range of EUV-DUV.

4. (Original) The method according to claim 1, further comprising the action of:

- creating said features by a modulator and deflector arrangement capable of deflecting and setting the intensity of said radiation beam.

5. (Original) The method according to claim 1, further comprising the action of:

- creating said features by a diffraction grating.

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6. (Original) The method according to claim 1, wherein said method comprises 2 exposure passes, of which a first exposure pass has a dose less than half of an exposure threshold and a second exposure pass has a dose greater than half of the exposure threshold.

7. (Original) The method according to claim 1, wherein said method comprises 3 exposure passes or more, of which said dose is increased linearly for every following pass.

8. (Original) The method according to claim 1, wherein said method comprises 3 exposure passes or more, of which said dose is increased exponentially for every following pass.

9. (Original) The method according to claim 1, wherein said method comprises 3 exposure passes or more, of which said dose is increased logarithmically for every following pass.

10. (Original) The method according to any one of claims 1-9, wherein each portion of said workpiece is patterned with a first exposure pass before exposing a next exposure pass.

11. (Original) The method according to claim 10, wherein said portions are exposed in the same direction.

12. (Original) The method according to claim 10, wherein said portions are exposed in alternating directions.

13. (Currently amended) The method according to claim 1 ~~any one of claims 1-42~~, wherein the dose of a the last exposure at a location on the workpiece is within the range of 40% to 60% higher than a the first exposure at the location on the workpiece.

14. (Currently amended) The method according to claim 1 ~~any one of claims 1-42~~, wherein the dose of a the last exposure at a location on the workpiece is within the range of 45% to 55% higher than a the first exposure at the location on the workpiece.

15. (Original) The method according to claim 1, wherein the coating sensitive to electromagnetic radiation is a chemically amplified resist (CAR).

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16. (Original) The method according to claim 1, wherein said workpiece is a mask substrate.

17. (Currently amended) The method according to claim 13 ~~or 14~~, wherein four writing passes are used.